113, 311, 651, 652, 623 Kerala AW11

/For data on Forest Panchayats and their finances, see 26: Rao, AW1 India, Tables 21-24, pp. 214-218, category 116.

against the all-India average of 7.5 acres; and over 60 per cent of the landholdings in Travancore-Cochin area are less than one acre in size.

1.31 The high pressure of population also reveals itself in an urge to push along the margin of cultivable area as far as possible. This is shown by the fact that the proportion of net sown area (45.25 lakh acres) to total area of the State was as high as 47.16 per cent against 39 per cent for the whole of India in 1956. The higher proportion assumes even a greater significance in view of the fact that forests cover over 25 per cent of the total area of Kerala (all-India—18%).

1.32 The agricultural labourers form a very high proportion of the agricultural population (Kerala 39%: India 17.5%), and the extent of under-employment among them is also one of the highest in India. The number of days of employment per agricultural labourer in Kerala was only 170 days per year[1], the lowest in the whole of India.

1.33 A deterioration in the position of the agricultural labourers is shown by the decline in the average annual income of agricultural labour households between 1951 and 1957. As can be seen from the table below, the average annual income of an agricultural labourer's household in Kerala declined from Rs. 486 in 1951 to Rs. 437 in 1956. This is a much steeper decline than observed in the case of the whole of India, presumably due to a higher rate of growth of population in Kerala than in India.

AVERAGE ANNUAL INCOME OF AGRICULTURAL LABOUR HOUSEHOLDS

	Kerala (Rs.)	*India* (Rs.)
1950-51	486	447
1956-57	437	437

Source: *Second Report of the Agricultural Labour Enquiry Committee.*

Consumption Pattern

1.34 The level of consumption expenditure per head is a good indicator of the standard of living prevailing in any region. Table 5[2] gives a comparative picture of the pattern of consumption expenditure for the rural areas of Travancore-Cochin[3] and India. As may be seen, the average monthly consumption expenditure in Kerala (Rs. 18.64) is lower than that in all-India (Rs. 21.44), indicating a somewhat lower standard of living in the State.

1.35 The break-up of total expenditure into different items of consumption reveals some interesting points. The expenditure on foodgrains, milk and milk products is not only absolutely lower in Kerala but even as a proportion of total expenditure, it is considerably below the all-India average. On the other hand, meat, egg, fish and 'other food' absorb quite a high proportion of consumption expenditure in Kerala. These differences reflect the relative scarcity of foodgrains

[1] *Report of the Agricultural Labour Enquiry Committee.*

[2] The data is compared for Travancore-Cochin and India (1952) because figures for Kerala State are not available. However, the conclusions are likely to be broadly true of Kerala also.

3 [See p. 272, category 11b -- Analysis]

Chapter 2

Agriculture and Plantation Crops

DISTINCTIVE FEATURES OF AGRICULTURAL SECTOR

161 A NUMBER OF distinctive features are characteristic of the agricultural sector of Kerala. 241 In the first place, Kerala surpasses all other regions of India in respect of the high pressure of population on land. Secondly, on account of the large number of valuable cash crops, the agricultural sector is more commercialized in the State than elsewhere. Thirdly, food production has always been far short of Kerala's requirements.

311 423 191 2.2 With the fast rising density of population, the margin of cultivation has been constantly receding. The proportion of net sown area to total geographical area is consequently much higher in Kerala (47.16%) than in the rest of India (all-India: 39.1%). The average size of land-holdings, however, is much smaller (1.5 acres) in Kerala (all-India: 7.5 acres). In the Travancore-Cochin area, 66 per cent of the holdings are below one acre in size. (Table 7)[2]

464 241 [171] 2.3 The scarcity of land in relation to population has been responsible for an acute state of unemployment and under-employment among the people in the rural areas. Unemployment is about three to four times higher in Kerala than in the rest of India. The acute state of unemployment is also accounted for by Kerala's cropping pattern which is comparatively less labour absorbing than in many other parts of India. The perennial crops which take up 47 per cent of the cultivated area need labour recurrently only for maintenance and harvesting[1] although crops like tea and rubber require human labour on a large scale for picking of the green leaves and tapping of rubber. The perennial crops require very little labour for basic operations such as preparation of seed bed, sowing, etc., except once in their life time.

433 241 434 2.4 However, the fact that the cropping pattern of Kerala is not labour-intensive is compensated to some extent by the higher value yield of the perennial crops per cultivated acre. The soil structure and climatic conditions in Kerala favour a high value yielding cropping pattern. On an average, cash crops contribute Rs. 100 crores (65%) to the income from agriculture (Rs. 151 crores). Of the cash crops, coconuts occupy 20.2 per cent of gross cropped area, standing next only to paddy which occupies 35.8 per cent of the gross cropped area. But the value yielded per acre for coconuts (Rs. 446) is more than twice that for paddy (Rs. 212). The position regarding the other crops is given in Table 9.[3]

433 241 2.5 In respect of plantation crops the only other State which approaches closest to Kerala is Assam where the proportion of cultivable area devoted to plantation

[1] This aspect is discussed in greater detail in the Chapter on Manpower No. 11.

[2] [see p. 273, cat. 116 -- Analyst]

[3] [see p. 275, cat. 116 -- Analyst]

11: India G-4,5 (1960-1961) 1962 AWII Kerala AWII

formed of gneissic debris by sub-aerial decomposition. The formation of coastal areas consists mostly of sands deposited by the sea. The soils are generally of poor fertility status. Some peculiar formations are found in the taluks of Ambalapuzha, Kuttanad, Vaikom and Shertallai and go by the name *peaty* or Kari soils. These are black and heavy and contain plenty of potash and 10 to 30 per cent organic matter. However, the soils are highly acidic due to the decomposition of organic matter under anaerobic conditions, presence of iron and aluminium salts and absence of nitrification. Attempts to reclaim the soils by liming and improvement of drainage have so far proved unsuccessful. In Trichur and Mukundapuram taluks there is yet another category known as *Kole* soils. These are fertile alluvial soils. The soils of Malabar area are quite different. They are mostly red soils formed *in situ* from the micaccons or granitic rocks below under the influence of weather and climatic conditions. The fertility of the red soil is poor. They contain very low proportions of organic matter and nitrogen. But these soils contain ferrous and aluminium ions in fairly large proportions and in the absence of humous this situation results in reversion of phosphate—a state where phosphorous when applied in the form of fertilizers, does not become readily assimilable by the plants.

Land Utilization

2.9 The fact that Kerala has drawn upon the margin of cultivable land much more than in the rest of India is borne out clearly by Table 8.2 The net sown area in the State during 1956-57 was 4,525,000 acres, that is 47.16 per cent of the total area. This is about 8 per cent more than corresponding all-India proportion (39.1%). The proportion of fallow lands in Kerala is also very low. (Kerala 4.4% : all-India 7.5%). A higher proportion of total area devoted to cultivation becomes all the more significant in view of the fact that forests cover about 26 per cent of the total area of the State compared to the all-India average of 17.44 per cent.

2.10 During the period 1951–57, there has been an overall improvement in the pattern of land utilization in the State. There have been significant increases in the area under forests (15.8%), permanent pastures (19.8%), land under tree crops (18.1%), net area sown (29.8%), and the area sown more than once (24.9%). These increases were mostly at the expense of cultivable waste, which declined by about 40 per cent during the period. The next important decline (16.7%) was in the barren and uncultivable lands. The area sown more than once rose by about 25 per cent, but this was partly offset by an increase of 35 per cent in the area under current fallows. (Table 8)2

2.11 Another notable feature of the agricultural sector in Kerala is the high intensity of cropping.[1] During 1956-57, the gross sown area was 5.6 million acres and the net sown area was 4.7 million acres. This works out to a crop intensity of 119 per cent (all-India 113%; Punjab 130%; Maharashtra 120%). However, if the field crops alone are taken into account, crop intensity works out to as high a figure as 150 per cent. It is the latter percentage which gives a more accurate idea of the

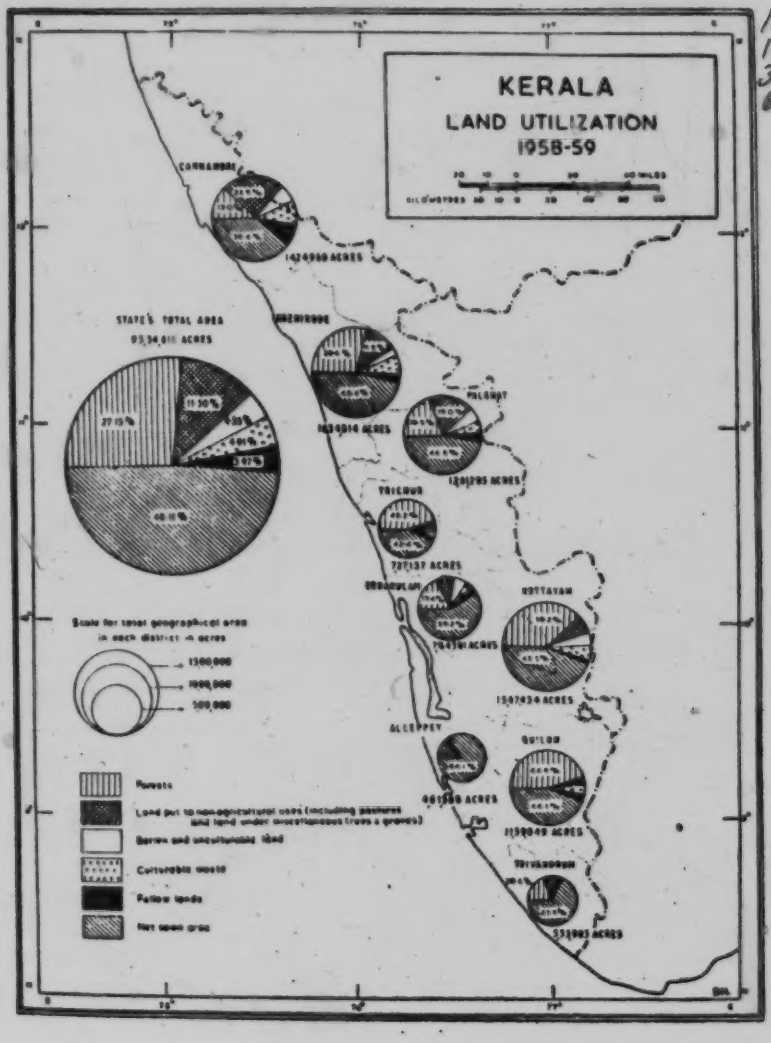
[text continues on p. 25]

[1] Intensity of cropping is the ratio between gross cropped and net cropped area.

2 [see p. 274, category 116 -- Analyst]

[P. 23]

MAP 5



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KERALA

LAND UTILIZATION PATTERN, 1950-51 & 1956-57

CHART 1

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

intensity of cropping since the area covered by perennial crops, which is quite large in the case of Kerala, is irrelevant from the point of view of double or triple cropping. It will thus be seen that not only is the proportion of cultivable area to total area high in Kerala, but the degree of utilization of the cultivated area is also quite high.

FIELD CROPS

2.12 The techniques of cultivation as well as the economics of field crops differ widely from that of commercial plantation crops. The field crops are generally characteristic of the subsistence economy whereas the latter are largely market-oriented. Moreover, unlike field crops the plantation crops are perennial and do not require annual repetition of preliminary agricultural operations like ploughing, sowing, etc. The returns too vary widely. Field crops and plantations are, therefore, discussed separately in the pages that follow.

Cropping Pattern and Yields of Field Crops

2.13 Rice, the most important field crop, occupies a prominent place in the agricultural economy of Kerala. In 1958-59, it covered 1.9 million acres out of 2.7 million acres under field crops. The production of rice in the same year was 939,000 tons. While the rice acreage fell by only 0.4 per cent during 1951–59, its production during the same period leapt up by over 31 per cent. Increase in the yield rate during the same period was from 829 to 1,108 lbs. per acre (Table 11).[1] The growing appreciation among farmers of the utility of fertilizers, improved seeds and better techniques of cultivation is largely responsible for this steady improvement.

2.14 Next to rice, tapioca is the most important field crop of Kerala. During 1951–59, the area under the crop increased from 506,000 acres to 553,000 acres, that is by 11 per cent. The production of tapioca in 1958-59 was 1.5 million tons, that is, an increase of 4.6 per cent over 1950-51.

2.15 Tapioca and rice considered together, account for over 54 per cent of the net sown area which is the same as 90 per cent of the area under field crops. Among the remaining field crops, ginger, groundnut, sesamum, sugarcane and pulses are the most important ones. Ginger is primarily an export crop, and its fortunes fluctuate with the trend of foreign markets. During the recent years, the area under ginger has steadily declined from 30,000 acres in 1950-51 to 22,000 acres in 1958-59. Other field crops, however, have shown significant increases in area over the same period. The rate of increase is the highest for sugarcane, where it rose from mere 2,000 to 22,000 acres—an increase of 1,000 per cent in less than a decade. This is due to the commissioning of a sugar factory (900 tons crushing capacity per day) at Thiruvella in 1954. The output of sugarcane, however, rose by only 775 per cent. The next highest increase has been in pulses where the area rose by 287 per cent between 1951 and 1959. Pulses, with the exception of *tur* (*Cajanus indica*), are now increasingly raised as second or even third crop by availing of the moisture left in the soil after the harvest of paddy. This development owes

[1] [see p. 277, category 116 – Analyst]

[text continues on p. 28]

[P. 26]

MAP 6

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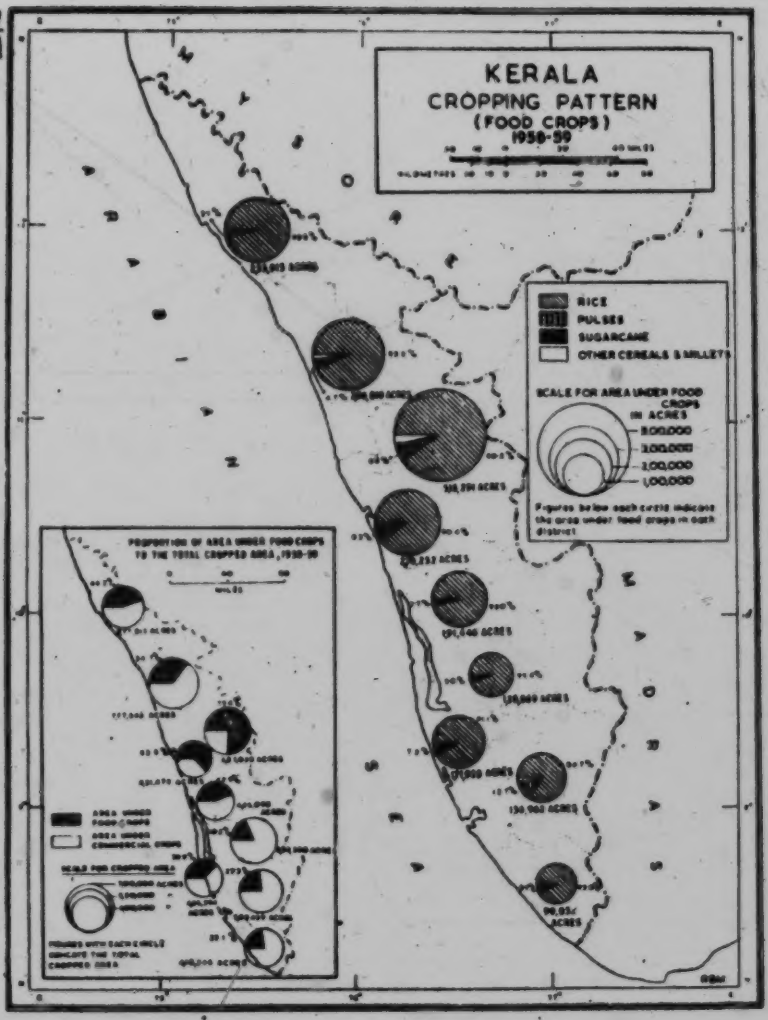
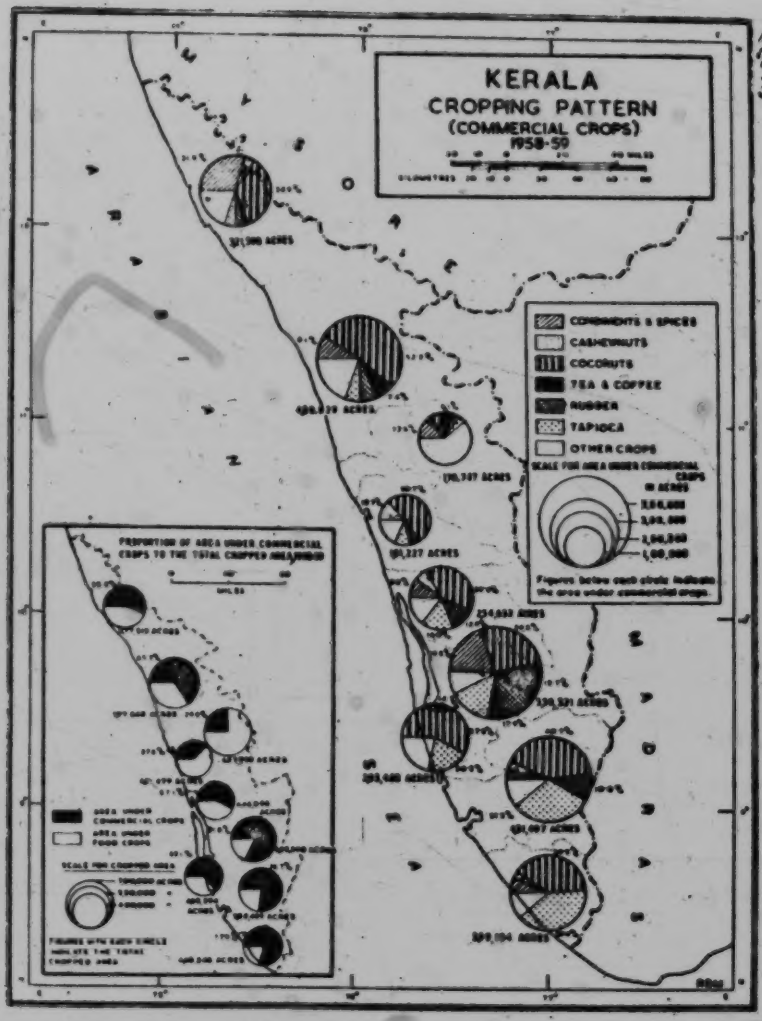
●311



[P. 27]

MAP 7



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Chapter 4

Forests

FORESTS RANK AMONG the key resources of Kerala. Estimates of the area under forests differ widely. According to the Revenue Department figures, the area under forests is 24.58 lakh acres, that is, 26.2 per cent of the total area of Kerala. According to the Forest Department, the area under its jurisdiction is 22.28 lakh acres. Private forests account for another 4.80 lakh acres thus giving a total forest area of 27.08 lakh acres (30 % of the total area). Whichever be the correct figure, it is clear that the proportion of area occupied by forests is much higher in Kerala than the average for the whole of India (17.2%).

4.2 Apart from the importance of forests as a source of raw material for the industry, and timber for other uses, forests have a moderating effect on the climate and act as a vegetal cover protecting the soil from erosion. The position in Kerala is quite satisfactory in respect of the protective function of forests. A large number of perennial tree crops like coconut, arecanut, cashewnut and rubber are also grown in the State. Their effectiveness in protection of the soil and influence on climate is as great as in the case of the forests. These perennial crops, therefore, act as a useful subsidiary to the actual forest growth.

4.3 The quality of forest growth of Kerala is also of a very high order. During 1955-56, forests contributed Rs. 5 crores,[1] that is, 1.4 per cent of the State income, which is almost double the all-India average (0.7%). Per acre yield of forests is also higher in Kerala. Whereas it was Rs. 5.6 per acre on an average for India, it was as high as Rs. 18 per acre in Kerala during 1955-56. Employment potential of forests, however, is quite meagre in relation to the area they occupy. Forests in Kerala employed only 19,000 workers, that is, 0.35 per cent of the total working force (all-India 0.4 %). Forests generally require only a few hands to work as the maintenance staff and as labour for extraction and logging.

Type of Forests and their Regional Distribution

4.4 The high yield and the large variety of important commercial species grown in the State are a consequence of the climatic and topographical features of the State. Kerala gets the benefit of south-west as well as north-east monsoons. As a result of these, the State is well assured of a good rainfall which, in addition, is fairly well

1. Appendix 2 explains the method of calculation.

11: India G-4,5 (1960-1961) 1962 AWll Kerala AWll

distributed over the year. The high degree of rainfall, old geological formation and maritime climate have largely been responsible for the luxuriant forest growth in Kerala. Trees get the full benefit of moisture, depth of soil and protection from frost and drought. For these reasons, forests in Kerala also possess the advantage of a long growing season.

4.5 Most of the forest area lies in the high ranges on the eastern border of the State and in the area adjacent to these. Only a few strips are found in the coastal plain. The forest area is, however, distributed over all the districts of the State. Since the forests run across the whole of eastern border while the districts in the State occur almost longitudinally, all districts, except Alleppey have a good proportion of their area under forests. The districts of Quilon and Trichur have as high as 45.2 per cent and 45.1 per cent respectively of their area under forests. (Table 23)[1]

4.6 The wide variations in climatic and topographical conditions in the State have resulted in a large variety of forests. With the exception of the desert, the truly temperate and the alpine types, all classes of forests are found in Kerala. In addition to the natural forests, Kerala has also got artificial plantations of valuable species. The State has been a pioneer in this sphere.

4.7 Among the natural forests, deciduous forests comprise 80 per cent of the growth. The rest is of the evergreen type. The evergreens are found mostly in the higher ranges above a height of 2,500 feet since they require a cool climate for their growth. The various types of forests found in the State are given below:

(1) *Evergreen Type*

(a) Southern tropical wet evergreen forests,
(b) Southern tropical semi-evergreen forests,
(c) Mountain wet sub-tropical evergreen forests, and
(d) The temperate Shola-Grasslands.

(2) *Deciduous Type*

(a) Southern tropical wet Deciduous forests and
(b) Tropical dry Deciduous Forests.

4.8 Among the evergreen types, most of the species are utilized in the manufacture of plywood and packing cases, which is a flourishing industry in the State. Pali Kulamavn and Vellapine are some of the well known plywood species. Anjali, which is used for boat-building and mahagony utilized for furniture, are two other important economic species found among the evergreens. Of late, a number of other evergreen species have sprung into prominence and are now finding economic uses. Since markets for these are growing, it is planned to extract these newer species also on a commercial scale.

4.9 Teak and rosewood are the most important species found among the deciduous forests. Vanteak, Rosewood, Poola and Charopine are some of the other important species belonging to this category. These species are chiefly useful in making furniture and in building and construction work. A detailed list of the trees and other major produce found in Kerala along with their present uses is given in Appendix 5.[2] A list of minor produce is given in Appendix 6.[3]

[1] [Table 23, appearing on p. 286 of the text, has not been processed--Ed.]
[2],[3] [See pp. 329-333, category 116--Analyst]

11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

SOME FORESTRY PROBLEMS

Acquisition of Private Forests

4.20 It has been mentioned that forests of Kerala are one of the best managed ones. But this is true only of the reserved forests under Government jurisdiction. In the Malabar area there are about 5 lakh acres of private forests which are maintained very unsatisfactorily. Unlike the reserved forests, there is no adequate protective staff for the care of these forests and no attention is paid to their regeneration or management on scientific lines. This has naturally resulted in an unwarranted depletion of forest wealth in the private forest areas. In the interests of adequate preservation of forest wealth, immediate steps are necessary to acquire the private forests and bring them within unified forest management under the control of the Forest Department. A provision for acquiring the private forests was made during the Second Plan but their acquisition could not be carried out. This must be effected during the Third Plan period.

The Problem of Encroachment

4.21 There is one other disquitening feature about forests in Kerala. Such is the pressure of population in the State that inroads are being made into the forest areas, especially where forests occur in the midland region. This has taken the form of Government deforestation of forest areas in the interests of Grow More Food Campaign. In addition, there have also been illicit encroachments and these areas are still under cultivation, although the State Government have declared them to be revertible. The extent of these areas is not very large compared to the total area under forests. About 9,750 acres fall within the former category and 16,500 acres belong to the category of revertible areas. The gravity of the encroachment situation arises from the fact that in case a lenient view is taken, these will prove a serious menace to proper maintenance of forest potential in the long run.

Regeneration of Evergreen Forests

4.22 The problems referred to above were of an administrative nature; but forestry in Kerala is faced with one or two urgent technical problems as well. One of these is to find out some way of inducing adequate regeneration of the evergreen species.

4.23 Of late a number of evergreen species have found new uses in the manufacture of plywood logs, railway sleepers, telegraph poles, etc., and these species have all come into prominence. Full potential of the existing evergreen forests cannot, however, be tapped since their natural regeneration takes time. The forest department has, therefore, got to keep control over the working of these forests.

4.24 In case of some species because of difficulties connected with regeneration, there has been a shortage of supply. The problem of regeneration of these forests is intimately connected with the problem of light. Regeneration requires light to

11: India G-4, 5 (1960-1961) 1962 AWll Kerala AWll

number of items of minor forest produce. It is, therefore, suggested that a proper survey of the forest areas should be conducted to assess the extent of minor forest products available in the State. This will bring out the raw material potentialities for the phyto-chemical industry as well as other small scale industries which could be based on the minor forest produce of the State.

Raising the Long-run Forest Potential

4.38 There is not much scope in Kerala for extension of area under forests through afforestation programmes. There are already a number of competing claimants for land use. The proportion of area under protective vegetal cover, as discussed, is also quite adequate in Kerala. What is necessary is to minimize the extent of further in-roads into forest areas by clear felling for cultivation, etc.

4.39 Having ruled out large scale afforestation as a means of improving the forest resources, the only other possible methods, to augment the forest pontential are improvement in forest management and raising of new commercial plantations. Forests under the jurisdiction of the Forest Department are already being managed on scientific lines. The primary need, therefore, is the acquisition of private forests so that the standards of management could be enforced uniformly throughout the State.

COMMERCIAL PLANTATIONS

Teak

4.40 In addition to the existing 75,000 acres under teak, there are 640,000 additional acres of low quality deciduous forests which are suitable for conversion into the valuable teak plantations. This changeover will considerably improve productivity of the deciduous belt. About 9,000 to 10,000 acres can be taken up every year against 2,000 to 2,500 acres being planted annually at present. The technique of raising these plantations has been perfected in Kerala and the present agri-silvicultural method, whereby the plantations are raised free of any cost to the State, may be continued.

Rosewood

4.41 Rosewood is in great demand by the furniture industry. Logs of over 72" girth are also exported, mostly to Italy. The supply is getting exhausted and it is desirable to replenish the stock by raising new plantations. The tree is slow growing. It is, therefore, proposed that it should generally be raised on the periphery of the teak plantations where it can be left to grow for 2 or 3 teak rotations. There should be no extra cost as the plantations are to be raised along with teak by the agri-silvicultural method.

Softwood Plantations

4.42 As a result of the difficulties in the way of regeneration of evergreen forests, the softwood species grown in these forests are in short supply. By the end of the

11: India G-4, 5 (1960-1961) 1962 AWll Kerala AWll

TABLE 8

LAND UTILIZATION PATTERN IN KERALA

Particulars of area	*1950-51*	*1956-57*	*Per cent (+)(—)*	*Percentage of area according to professional survey 1956-57*
1	2	3	4	5
Area According to Professional Survey	9,343[a]	9,693	+3.7	..
1. Area according to Village Papers	9,065	9,412	+3.8	..
2. Forest	2,121	2,458	+15.8	25.62
3. Land put to non-agriculture uses	466	503	+7.9	5.24
4. Barren and Unculturable land	596	497	+16.7	5.18
5. Total (not available for cultivation) (3+4)	1,062	1,000	—5.8	10.42
6. Permanent Pastures & other Grazing lands	101	121	+19.8	1.26
7. Land under tree crops and groves not included in N.A.S.	430	508	+18.1	5.29
8. Culturable waste	720	437	—39.4	4.55
9. Total (other uncultivated and ex-fallow land) (6+7+8)	1,251	1,006	—14.8	11.11
10. Fallow lands other than current fallow	227	207	—8.8	2.16
11. Current Fallow	115	155	+34.8	1.62
12. Total Fallow land (10+11)	342	362	+2.9	3.77
13. Net Area Sown	4,289	4,525	+28.8	47.16
14. Total Cropped Area	4,975	5,382	+ 8.2	56.10
15. Area Sown more than once	686	857	+24.9	8.93

[a] Corresponds to 1951-52 figures.

6:Spate N-4 (no date)1954 AW1 India
Kerala AW11

below 70°, the annual range at Cochin is only 6° and the diurnal is about 10°. Apart from the high falls (180 ins. plus) in the hills, rainfall decreases from N to S (Calicut 119, Trivandrum 64 ins.) and the extreme S, around Comorin, falls below 40: here alone are there major irrigation works. But this decrease is balanced by a better seasonal distribution in the S: Trivandrum has 24·85 ins. in June–August, 21·32 in September–November, and 18·23 in December–May—28% in what is an almost completely dry season in nearly all the rest of the sub-continent.

Kerala as a whole (including the hills) has an area of about 15,500 sq mls, of which some 20% (mainly on the Travancore hills and foothills) is forested and 45% NSA. The TSA is about 15–20% greater than NSA in Cochin and Malabar. The question of 'culturable waste' is, as usual, difficult; but it seems that in the alluvial and lateritic zones respectively about 75–80 and 65–70% of the total area, or 90 and 80% of the 'cultivable', are in fact cultivated.[44] It is clear that what is left will be marginal and that there is very little room for expansion.

Rice is dominant, occupying about 260,000 out of a TSA of 550,000 cropped ac. in Cochin, 860,000 out of 1,790,000 in Malabar, but only 655,000 out of 2,200,000 in Travancore. The area under rubber, tea, and pepper in the Travancore hills accounts for this in part; but in Cochin and Malabar a good deal of rice is grown on the lateritic hills after burning the jungle; the heavier rainfall has probably a bearing on this. The local variations in cropping, analysed in detail in Kuriyan's 1942 paper, deserve summarising:

(i) In the extreme S rice is grown by canal- and in Shencottah taluk (E of the hills and really outside the region) by tank-irrigation. With intensive watering and careful transplanting crops can be obtained both in September–October and in February–March. In Chittur taluk—the Cochin outlier in Palghat—there is also a little irrigation by *anicuts* or weirs feeding canals, and here cotton and groundnuts are grown. These three areas are strongly influenced by Tamil methods.

(ii) Along the backwaters (*punja* and *cole* areas) the problem is not to get water on the land but to get it off. These areas are divided into blocks of up to 50 (exceptionally 100) ac., bounded by double dykes enclosing a channel. From July to September–October the ground is submerged, sometimes to a depth of several feet; after the rains the water is lifted into the bounding channels by Persian wheels; latterly oil-driven and still more recently electric pumps powered from Pallivasal have been introduced. The land lies three or four feet below the water-level in the channels, and sluices regulate various inundations during the growing season. Should the bunds be burst the half-drowned crop may be reaped from boats by cutting off the heads.

(iii) Along the backwaters on the Cochin-Malabar boundary the soil on areas liable to salt-water inundation is heaped up into mounds about one foot

[44] Kuriyan (1938), 133; (1942).

6:Spate N-4 (no date)1954 AW1 India
Kerala AW

high and five feet round, on which the paddy is sown just before the rains. When the monsoon bursts the surrounding water is freshened and transplanting takes place. This is a rather precarious method, illustrating the devices enforced by severe population pressure.

(iv) In the wet lowlands above the backwaters more normal methods prevail, but the early onset of the rains enables planting to take place in April–May and harvest in September; the continuance of the rains then often permits a poor second crop (not necessarily paddy) harvested in January; very occasionally a third is possible.

After rice, coconut is the chief crop, accounting for nearly 1 m. ac., typically, of course, in the sandy coastal strip but also on alluvial loams and (with more careful preparation) on laterites. In Travancore the coconut acreage is nearly equal to that of rice; in Quilon taluk, indeed, it covers 85% of cropped area. After rice as the essential food, the coconut palm is the basis of life in Kerala: "Apart from the several uses of the chief products, viz., coir, copra, coconut oil, oil-cake, the hollowed trunk serves as a canoe, the nut forms a staple article of diet, the leaves may be used for many of the purposes of paper, are frequently employed as thatch and for the manufacture of brooms, baskets, umbrellas, tattis [screens kept soaked to cool rooms], and fans, and utilised as crude torches in a dried form, or burnt as fuel, as it is [*sic*] or in the form of charcoal. In addition, the fresh or fermented juice of the stem is consumed as a beverage, by evaporation it is made into jaggery and by subsequent treatment even sugar is obtainable. When distilled, the toddy becomes arrack and finally vinegar."[45] Of the "industrial" workers of Kerala—most of them, of course, cottage workers—about a third are in various processes connected with coconut products, and of these two-thirds are women. The coir 'yarn' is almost entirely cottage-produced, its working-up into mats and so on largely a small factory industry.

The most important other crops (apart from plantation rubber and tea in the hills), are cassava (tapioca) and pepper, mainly in the foothills. The former is grown as a food crop on poorer lateritic soils; pepper is perhaps the chief peasant-produced cash crop after coconut. Cereals other than paddy are negligible, as are oilseeds except for a little sesamum (gingelly), often as a third crop on the higher wet-rice lands. Nearly every homestead has its plantains and other fruit trees, and ginger and the betel vine, with its associated areca palm, are also grown widely but in tiny patches.

Tapioca deserves special mention. Introduced about 1920, it is grown on the lateritic soils ("about as attractive for agriculture as railway ballast") in tiny holdings by the poorest of the poor. As Gourou points out, there is a sort of social inversion: the better-off rice farmers in the valley-bottoms, and a hundred feet or so above them a very wretched (largely Christian) peasantry.

[45] Quoted in Kuriyan, 1937 (Vol. XI), 286. Cf. P. K. Paniker, "The Coconut—its Cultivation on the Malabar Coast", *IGJ* XVIII (1943), 78–88.

6:Spate N-4 (no date)1954 AWI India
Kerala AWI

161 Malabar, Cochin, and Travancore respectively 14, 23, and 27% in 1921–31, 11, 18, and 19% in 1931–41. The decrease in rate seems to be associated with later marriage. Females outnumber males in Cochin (1042:1000) and in both Cochin and Travancore the proportion of unmarried females over 15 years old is several times greater than that of India as a whole—in 1941 Cochin had 172 per mille and Travancore 107 against an All-India rate of 36. In Cochin also the proportion of children under 10 had been stable in the last two Censuses.[47] The rate of increase, however, turned upwards again in 1941–51, which added to Travancore-Cochin 1,772,264 souls—an increase of 23·6% compared with an *Indian* average of 13·4. Population is now **9,280,425** with a density of **1015** on 9155 sq mls.

161 311 The situation is grave; on the 1931 figures Kuriyan calculated that taking a liberal view of the potentialities of 'culturable waste' only another 2,000,000 souls could be supported. Holdings are extremely small—96% under 10 ac., 87% under 5, 38% less than 1; and 5 ac. is regarded as the minimum for a family to live in reasonable comfort.[48] In Cochin the total area per person in 1941 was 0·67 of an acre, of cultivable land 0·36, of land actually cultivated 0·29; and the rice grown is sufficient to feed the people for only 7 out of 12 months.[49] During the war the Cochin and Travancore governments prided themselves, with some justice, on the efficiency of their procurement and rationing, but the ration was minimal even by Indian standards. As we have seen, agriculture is in many respects extremely intensive; yet in many areas there is a slack season from May through August, and this coincides with the slack season in sea-fishing owing to the stormy monsoon.

Diversification and expansion of agriculture are thus urgently necessary. But the density on cultivated area in the lowland is now at least 2250, and there is here very little land available for expansion on the most optimistic view imaginable. Various plans exist for irrigating perhaps 100,000 ac., mainly in the foothills; but these will not go very far, and it is difficult to see where the 15,000 ac. allotted to jute in 1950 can be fitted in. Even in the foothills there are well over **1000** persons to the cultivated square mile. Here, however, there is perhaps some room for diversification by expansion—perhaps of poorer crops on the poorer soils. Gram, soya, and other pulses, fodder crops, and buckwheat are suggested by Kuriyan, together with more tapioca and fruit. Other occupations may play an ancillary role in relieving pressure, but their scope is limited.

361 As for settlement patterns, the extreme density of population (as in Bengal) produces a close stipple of habitations; there are no grouped villages (other than mere thickening of homesteads) except in the tran-

[47] 1941 Census, Vol. XIX (Cochin), 18–24; the discussion is largely based on Cochin figures since this, by exception in 1941, is an excellent report.
[48] *Ibid.*, 31; Kuriyan (1938), 140, where 8–10 ac. is given as the 'economic' holding.
[49] 1941 Census, Vol. XIX, 31.

6:Spate N-4 (no date)1954 AWI India
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sitional areas—Comorin, Shencottah, Palghat, parts of Malabar. The importance of food-producing trees (coconut, areca, plantain, jackfruit) fits in with this: they are grown in the house compounds, so that the actual dwelling-space subtracts hardly anything from the cultivation-space, while

Fig. 122.—KERALA: COASTAL SETTLEMENT. 40 mls N of Cochin town. Dots, habitations; shaded, paddy. Note contrast between linear settlement on beach-ridges (under coconut) in W and ring settlement around lateritic rises in E. SOI 58 B 2; courtesy SOI.

at the same time the compounds ensure that the 'village' is loosely built, and may indeed spill all over the village lands. (Fig. 122.)[50]

Along the coast there is a marked linear tendency, houses and coconuts on the sandy ridges with their fresh ground-water, paddy in the lows. Inland the lateritic topography exercises a marked effect, settlement being strung out along valley-flanks or interfluves or forming a complete ring around the rises. (Fig. 123.)

[50] The 14th and the 20th centuries tell the same tale. "Mulaybar, which is the pepper country, extends for two months' journey along the coast. . . . there is not a foot of ground but what is cultivated. Every man has his own orchard, with his house in the middle and a wooden palisade all round it." (Ibn Battuta, *Travels in Asia and Africa, 1325–1354*, trans. H. A. R. Gibb (1929), 231–32). Along the 40 miles from Quilon to Trivandrum one is never out of sight of habitations or foot-travellers; G. Slater, *op. cit.*, 172.

6:Spate N-4 (no date)1954 · AWI India
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Towns

The towns of Kerala are for the most part either ports or crossing-points on the backwaters. There is virtually no indigenous maritime tradition, but from very early times spices attracted traders from E and W: Arabs, Graeco-Romans, Chinese.[51] With the Discoveries the Malabar coast became the scene of a fierce struggle between the Portuguese and their Muslim and European rivals. Relics of the era of European conflict are the tiny French settlement of Mahé (26 sq mls, poptn (1941) 14,092) and the exclaves of former British territory at Cochin itself and in Travancore

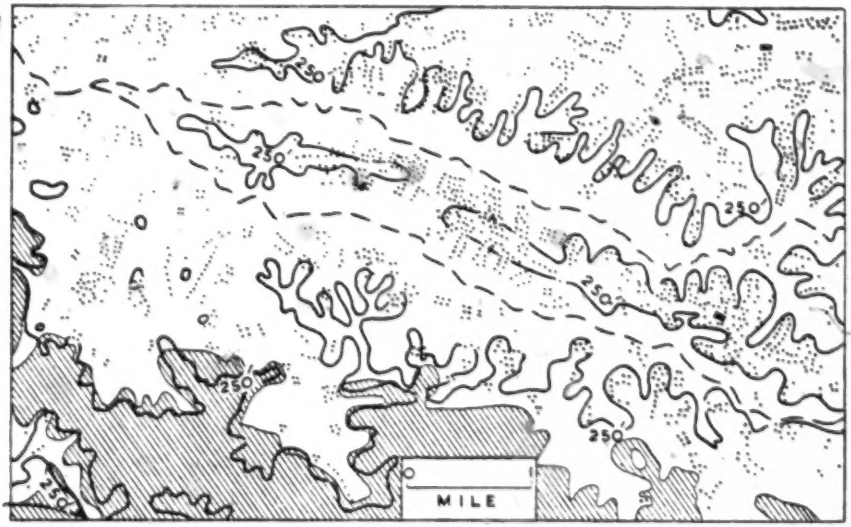

Fig. 123.—KERALA: INLAND SETTLEMENT. 5–10 mls SE of Palghat town; lateritic foothills in approach to Palghat Gap. Dots, habitations surrounded by groves; shaded, forest; blank, cultivation; broken lines, seasonal streams. SOI 58 B/10; courtesy SOI.

at Anjengo and Quilon (Tangasseri), which last had an area of 99 acres!

In Malabar Dt Tellicherry (36,320) exports most of the Coorg coffee and some pepper and copra; Calicut (158,724) has a similar trade but is more important administratively. Both ports are mere roadsteads, ships lying two or three miles offshore and lighters working from one or two piers, but at Tellicherry the shelter of offshore reefs enables some traffic to be carried on during the monsoon.

Cochin is far more important: it really consists of two adjacent towns, ex-British Cochin (26,320) and Cochinese Cochin or Mattancheri (53,346). Cochin is in fact the oldest European settlement in India; on Christmas

[51] On the Chinese shipping, see Ibn Battuta, *op. cit.*, 235–6.

6:Spate N-4 (no date)1954 AW1 India
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atypical. Much of it indeed revolves around the hill-station of Ootacamund, lying under the highest point of the plateau, Dodabetta (8760 ft). 'Ooty' and its satellites Wellington and Coonor have the usual hills layout of straggling bungalows; they are reached by a metre-gauge rack-railway with gradients of 1 in 12½. There is a little local industry of the kind associated with resort functions: breweries (now presumably under a cloud), sodawater factories, and so on; tea, quinine, and eucalyptus oil are processed, and at Wellington the Government cordite factory had one of the earliest hydro-electric installations in India. Of much greater importance is the power station at Pykara Falls, with an installed capacity of 38,750 kW; large extensions are planned, and in addition the utilisation of the Pykara tail-water over a 1200-ft drop in the Moyar Valley, to produce another 36,000 kW, forming a new link with Mettur. This is in the future; but already the leisure resort of S India has become one of the most vital nodes in its workaday life.

(b) *The Anaimalais, Palnis, and Cardamoms*

This remarkable group of hills (Figs. 121, 150) is more complex than the Nilgiris, and in Anaimudi itself they have the highest peak of the Peninsula, 8841 ft. The front to the Palghat Gap is remarkably steep and in the E remarkably straight; the SE flanks of the Palnis, overlooking the upper Vaigai re-entrant, are also remarkably abrupt, as are the Cardamoms and their protrusions (Varushanad Hills) S of the Vaigai. But to the NW the hills fray out into long SE–NW ridges; and indeed over much of the area this trend is most marked, the rivers (e.g. the Periyar) having longitudinal stretches of such straightness as to suggest control by faults, with transverse gorges producing a perfect trellis-pattern. Between 10° N and the Shencottah Gap the active streams of the exposed Arabian Sea front have pushed the watershed back to within 4 or 5 miles of the En edge of the hills: here the change from jungle-clad mountains to the tank-pitted Tamilnad Plain is very sudden (Fig. 150).

Again, apart from the shifting cultivation of tribes some of whom (e.g. Cochin Kadars) are hardly more than hunters and gatherers, the economy is atypical: forests, plantations, hydro-electricity. The most exploited forests, served by special light railways, are in the NW, the Cochin slopes of the Anaimalais. As for plantations, these are not confined to the Wn flanks but are more numerous there, where there is a broader plateau development than on the E. A little coffee and tea are grown in Cochin and in Madura Dt (Madras), but the major share of the plantations (78,000 ac. tea, *c.* 6000 coffee) is in Travancore, which is also by far the most important rubber-producing area of India, with nearly 100,000 ac. bearing against 13,000 in Malabar and 10,000 in Cochin (1945). It is grown on the lower slopes generally below 1000 and never above 2000 ft, with 80–120 ins.

6:Spate N-4 (no date)1954 AW1 India
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Marathi AW1

K T 241 311

rain. Above the rubber, tea extends to nearly 6000 ft, and indeed more than half of it is grown above 4000 ft; rainfall is usually 100–150 ins. It is noteworthy that over half the rubber is produced on Indian-owned estates, but only a small fraction of the tea.

K T 377

As for hydro-electricity, the hills are dotted with falls and rainfall on the Wn flanks is everywhere high and reliable. So far the most important large development is at Pallivasal in Travancore (installed 21,000 kW, potential 36,000), which powers the aluminium smelters at Alwaye and also works pumps draining the flooded paddy-fields of Kerala. A project of great interest is that for utilising the great Periyar Reservoir (Fig. 150) for power. The Periyar headwaters have been impounded and are taken through the watershed by tunnel to irrigate the Suruli-Vaigai Valley in Madura; some 40,000 kW might be developed, and altogether the region has a potential of at least 200,000 kW.

K T 211 361

The Wn flanks of the hills are too rain-swept to have much settlement except on plantations, forest camps, and power installations. In the E Kodaikanal, lying at 7000 ft on the Palnis, is a minor hill-station, noted for its mission schools and an old-established physical observatory.

Maharashtra

M 133

Maharashtra, the Maratha country *par excellence*,[5] may be taken as roughly coterminous with the main mass of the Deccan Lavas above the Ghats. To the N the Tapti Valley, flanked by typical lava plateaus but floored by alluvium, forms a transition to the central Indian scarplands; in the S, along the Malaprabha, there is another belt where Archaeans and lavas interdigitate and where cultural allegiance is divided between the Marathi and Kannada (Kanarese) languages. But to the E, in Hyderabad especially, the boundary of Marathi speech shows a striking accordance with the edge of the Lavas (Fig. 127); hence the division of the state into Marathwara and Telangana, a rare instance of official recognition of regionalism. This great area thus includes all central Bombay, the NW third of Hyderabad, and SW Madhya Pradesh (CP) as far as Nagpur.

M 197 631

The Terrain

M 133

It is a region of extraordinary physical homogeneity, in the gross at least, although (as Deshpande points out) detailed study would undoubtedly reveal significant differences in erosional features, soils, vegetation, and farming practice depending on the varying petrology of the lavas. The general slope to the E and SE is gentle: Poona lies at 1800 ft, and it is over 100 miles down the Bhima to the 1500-ft contour. From the Ghat culminations long tongues of higher ground (over 2000 ft) run E and divide the plateau

[5] The etymological connection of Maratha or Mahratta and Maharashtra, if any, is still controversial.

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

566 [462] work connected with the harvesting, separating the paddy from the stalks, etc. They are employed as a rule throughout the year by their masters; in leisure days however they are paid a little less than the stated wage.

[262] They take kanji (rice boiled in water) and toddy in the morning, toddy in the afternoon, cooked rice at night; they eat also fish and flesh. They behave well, are obedient and honest and loyal to their masters, very earnest about their work, but are completely illiterate. There are no schools for them in the village.

[778] [796] They worship spirits in the shape of stocks and stones; and on the occasion of the festivals of their Gods and Goddesses they take a good dose of toddy and with drums and bugles and priests dance in the premises of the 'temple'.

564 There are sub-divisions among the Pulayas, Cherumas, Paraiyas, Nayadis, Malayas and others, who form separate castes among themselves and are restricted in their intercourse with one another.

[361] The Cherumas dwell in colonies of two or three families each, in low, small thatched huts near the land of their masters. It must be admitted that they are not treated properly by the high caste Hindus, though they form the backbone of agricultural labour in these parts. They are low paid and underfed and treated with contempt and sometimes with harshness by the other castes and their masters. It is a wonder that they still cherish obedience to their masters and earnestness in their work. There are a few who try to get rid of the yoke by running away, but the majority are contented and stay with their masters. They are experts in practical agricultural work and can face any sort of weather.

311 *Land and Occupation of land—*

	ACRES.
Area of wet lands	653·24
,, dry lands	937·21
,, lands watered by wells	...
,, common waste	18·81
Pasture other than common waste	33·94
Woods and forests	1,912·35
Fruit trees and scattered shade trees ...	301·48

312 There are altogether five public tanks in the village, most of which are not used for irrigation purposes at all, but for bathing, which is done by all at least once a day. There are no public wells. The cultivation of rice solely depends on the rains of the South-West Monsoon (June—September) which are copious, and of the North-East Monsoon in November. Every house however contains a well, from which water is drawn for drinking purposes and for watering the compound gardens in the summer. Water can be obtained at a very slight depth in most parts except at the foot of the hills. The sides of the tanks, usually not very large in size, are paved step by step with granite or laterite stones by which people can step down into the water for bathing. Water is lifted from the wells by means of pots for drinking purposes, but for watering gardens lifts of various sorts are used.

406 The water wheel, which costs about Rs. 35, is very rarely used except in *kol* fields where water has to be lifted out of the land.

406 The mhote too is seldom seen in these parts. The more common sorts of water-lifters are (1) an oval shaped bamboo-basket (costing about As. 2); (2) a wooden groove provided with a handle, costing about Re. 1; (3) and a frame-work consisting of two long bamboos, one small and another big in size balanced on a horizontal beam which is supported by two vertical poles; a picottah is attached to the small-sized bamboo and is drawn up and brought down by one or two persons standing opposite each other on two planks thrown across the middle of the well. The whole frame together with the picottah costs about Rs. 2. The oval shaped basket and the wooden groove are used to spread water from water courses and not from wells. Two persons, generally women, stand opposite each other on the side of a watercourse and pull the basket towards themselves by means of ropes tied round its 'ears' after filling it up with water; the extreme ease and facility with which they carry on the operations, often to the accompaniment of a snatch of song, is wonderful. The wooden groove is allowed to swing on a string and is moved to and fro by a person holding the handle.

651 The classes into which wet and dry lands are divided, the extent of each and the amount of assessment are subjoined.

Classes.	Wet lands.				Dry lands.	
	Single crop.		Double crop.		Single crop.	
	Area.	Assessment.	Area.	Assessment.	Area.	Assessment.
	ACS. C.	RS. A. P.	ACS. C.	RS. A. P.	ACS. C.	RS. A. P.
I ..	35 65	116 7 9	320 74	1,527 5 5	301 48	261 11 3
II ...	4 56	15 10 9	59 72	210 6 3	12 69	3 12 8
III ...	16 0	36 0 7	39 73	114 6 0	212 60	77 5 7
IV ...	21 37	39 9 8	15 51	34 11 2	68 39	17 10 3
V ...	109 59	147 9 11	11 5	17 12 11	207 53	44 6 8
VI ...	18 6	34 10 10	1 24	3 2 5	56 49	3 13 8
VII ...	...	...	...	...	78 3	37 0 3

135 The selling prices of cultivable wet land in the village are approximately Class I Rs. 1,500, Class II Rs. 1,000, Class III Rs. 800 Class IV Rs. 500—600, Class V Rs. 500.

311 423 The land is classified according to tenure as follows:—

I. 'Pandaravaka Verumpattam' (Sirkar) non-favourable tenure.	Nilams (wet land) (A. 86·73).	109 pattadars.
	Parambas (dry land) (A. 210·88).	
II. 'Pandaravaka Kanam' (Sirkar) favourable tenure.	Nilams (A. 2·19) ...	4 pattadars.
	Parambas (7 cents) ...	
III. 'Puravaka' (outside Sirkar).	Nilams (A. 563·61) ...	54 pattadars.
	Parambas (A. 711·80)...	
IV. Inams (gift tenure).	Nilams (71 cents) ...	6 pattadars.
	Parambas (A. 14·47) ...	

Between ages	41—50	11
,,	51—60	9
,,	61—70	9
,,	71—80	10
84 years of age		1
92 ,,		1
		156

It is to be noted that infant deaths are more than half the total deaths and number 87 out of 156 last year.

This information is not fully accurate because the people do not report births and deaths generally to the village officials and consequently they have to ascertain the facts by inquiring and it is possible that some births or deaths escape their notice. The ignorance of the people and the unnecessary fear of post-mortem examination in the case of deaths explain their silence. Probably a considerable number of infant deaths escape report.

Paracheri.—Three families, 15 members.—7 women, 8 men.

Number of dead for the last ten years—

Family No. 1	7
,, ,, 2	5
,, ,, 3	4

The village lana—

	Acs.
Garden lands	792½
Wet lands	360¾
Dry ,,	135⅜
Government lands	14⅛
Inam lands	201¾
Total	1,504 17/24

There are no waste lands.

The principal fruit trees are mangoes, jacks, plantains, and there are not many though sufficient for the village consumption.

There are tanks and wells in plenty. Drinking water is got from wells; and the tanks are used for bathing and for agricultural purposes.

Occupation of land and Agriculture.—The number of kanomdars in the village is 385. The large kanomdars do not generally cultivate the land themselves.

The land is divided into small strips, each strip containing from 50 to 1,000 coconut palms. The large kanomdar takes his residence on one of these strips, and he himself cultivates the particular strip where he is, and gives to small tenants the remaining strips belonging to him. Consequently only about 180 acres of the whole village are cultivated by the large kanomdars. In addition to these lands three kanomdars cultivate all of their land. Two are Muhammadans and one a Tiyya. The area belonging to these three kanomdars is about 134 acres. The remaining land, 1,200 odd acres, is given to tenants to cultivate. There are also between 200 and 300 small kanomdars belonging to the agricultural classes, who hold land insufficient for their maintenance and also cultivate the lands of big kanomdars. A number of the big

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The statistics of births and deaths of this desam are obtainable only for the year 1915. They are given below :—

Births.

Males	... ...	50	Hindu	... ...	84
Females	... ...	43	Muhammadan	...	9
		93			93

Deaths.

According to age—

Lifeless deliveries	7
Below one year	9
Between 1 and 10	13
,, 10 and 20	1
,, 20 and 30	7
,, 30 and 40	3
,, 40 and 50	...
,, 50 and 60	3
,, 60 and 80	5
	48

According to sex and castes—

Males	24	Hindus	43
Females	24	Muhammadans ...	5

There is no paracheri in the strict sense of the term. The depressed classes, mostly Cherumas, are still in a state of semi-serfdom, depending for everything on their landlords and masters.

Land.—The area of the desam by settlement is 1,803·40 acres. This desam together with Mattupalli, Peringode, Pillakkattiri, Tolukad, Mathur, Alikara, Kuttanad, Perumannur and Chalisseri desams formed the old revenue amsam of Kothachira. Now Kothachira revenue amsam includes only Kothachira, Mathur and Peringode desams.

The areas under each description of land—

——	Wet.	Garden.	Occupied dry.	Unoccupied dry.	Unassessed.	Inam.	Poramboke.	Total.
	ACS. C.	ACS. C.	ACS. C.	ACS. C.	ACS. C.			ACS. C.
Private Jenmi.	445 27	209 43	197 16	935 71	..	...	...	1,787 57
Government Jenmi.	...	...	...	..	...	..	..	...
Unregistered lands.	...	...		...	15 83	...	...	15 83
	445 27	209 43	197 16	935 71	15 83	..	...	1,803 40

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241
463 toddy and jaggery and three carters who are mainly agriculturists.

654 The revenue for the year 1915-16 was Rs. 3,175-10-3. The assessment for fasli 1312 for the Amsam of Kothachira was Rs. 6,519-2 4. By settlement (fasli 1326) it is Rs. 11,228 7-0.

241 *Agriculture.*—We have mentioned elsewhere the names of the chief crops. Out of these, the two staple products are paddy and arecanut, the former being a field cultivation and the latter garden. The mainstay of the bulk of the population is arecanut. Every household of any worth is surrounded by an areca palm garden.

The method of cultivation pursued in both these is of an antiquated character.

245 1. *Arecanut.*—Mature fruits are selected for seeds. They are kept in pots and watered for one year. Next year they are planted and within a year and a half or so, they grow into young plants Then they are transplanted into the gardens where they have to be grown. They are planted in parallel lines, the distance from one another varying from two to three yards. The plants are at first placed in pits measuring a cubic yard. Some cow dung and ash manure are put, and a watering is given on alternate days in the summer. During the monsoon they are left to themselves. When the plants grow up into trees, the pit is filled up and a shallow basin round it made just to contain a few gallons of water. These are renewed every year in the beginning of summer, small channels are cut across the gardens to bring water to the root of every tree, water-lifts are erected and regular watering begun. This will continue until the advent of the monsoon.

243 2. *Paddy.*—On the first shower of the monsoon, fields are given a hasty ploughing and seeds are thrown. A fortnight of average showers helps healthy sprouting and the ryot prays for similar weather for another two fortnights to come. By this time, they have grown up into healthy plants. Between the second and third month of their growth, they are carefully unrooted and planted in plots prepared by ploughing for the purpose. Between the fifth and sixth month after sowing comes the harvest. If there is a second crop, the land is again prepared for sowing immediately after harvest and the whole process repeated. For this crop the ryot depends on the north-east monsoon which gives two months of heavy rain from the middle of November to the middle of January. After this harvest the fields lie fallow for a period of two or three months.

651 A table given in the next page will show the areas under single
134 and double crop, different soils, and the nature of the assessments
311 on each. (The information is taken from the village accounts.) The assessment given herein is the revised one after the re-settlement.

Description of soil.	Wet.						Garden.					Occupied dry.				
	Taram.	Whether single or double crop.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.	Taram.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.	Taram.	Rate per acre.	Area.	Assessment.	Jenma-bhogam.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
			RS. A.	ACS. C.	RS. A.			RS. A.	ACS. C.	RS. A.			RS. A.	ACS. C.	RS. A.	
Red loam, VII-1 ...	...	...	...	...	...	...	2	6 0	1 49	8 15	...	2	1 8	1 10	1 11	...
	...	...	...	...	...	...	3	5 0	4 24	21 3	...	...	...	...	...	...
VII-2 ...	2	1	5 0	8 97	44 14	..	3	5 0	0 75	3 12	...	3	1 0	52 46	52 10	...
	...	2	6 4	205 46	1,284 2	...	4	4 0	24 95	99 13	...	...	...	...	...	...
	...	...	...	...	.	...	5	3 0	33 18	99 8	...	...	...	...	...	...
	...	...	...	...	...	...	6	2 0	73 71	147 5	...	...	...	...	...	...
	...	...	...	...	...	...	7	1 0	13 75	13 12	...	...	...	...	...	...
VII-3 ...	3	1	4 0	33 76	135 1	..	5	3 0	15 67	46 14	...	4	0 12	11 394	85 7	...
	...	2	5 0	95 82	479 3	...	6	2 0	18 28	36 9	...	...	...	...	..	...
	...	...	...	..	....	...	7	1 0	21 56	21 9	..	...	...	..	...	...
VII-4 ...	4	1	3 0	50 60	151 15	...	6	2 0	0 60	1 6	...	5	0 10	89 50	12 3	...
	...	2	3 12	10 57	39 10	..	7	1 0	0 80	0 13	...	...	...	...	...	...
VII-5 ...	5	1	2 0	33 29	66 12	..	...	...	...	...	...	6	0 8	2 62	1 5	...
	...	2	2 8	0 59	1 8	..	...	..	...	..	...	...	...	...	..	...
Red sand, VIII-3	4	2	3 12	6 21	23 4	...	7	1 0	0 55	0 9	...	5	0 10	6 28	4 0	...
VIII-4	...	...	...	...	...	..	...	..	...	...	...	6	0 8	1 26	0 10	...
Total ..	...	...	...	445 27	2,226 5	..	...	...	209 43	502 0	...	...	...	197 16	157 14	...

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311 *Land.*—

	ACS.
Wet land	681·07
Occupied dry land	231·12
Unoccupied dry land	1,221·92
Garden land	109·59

137 Woodlands cover an area of about 150 acres. Shrubs and thickets, as well as rank undergrowth are found almost everywhere. Big trees, scattered and in groves, are also abundant.

Fruit trees and scattered shade trees are abundant. Among the former may be mentioned the mango, jack, coconut and areca-nut palms, the palmyra palm (yielding toddy), etc. There are numerous kinds of shade trees, many of which can be used as timber. Among timber trees specially may be noted the teak and the jack-tree.

312 Tanks and wells are very numerous. Wells indeed are too numerous to be enumerated. Every house has one or more and there are several in the fields, about one in an acre. There are more than 50 tanks, though some of them are mere ponds, dry in most months. A few tanks yield water unfailingly for irrigation on a small rate. They may be 6 to 20 feet deep and of varying lengths, from, say 10 to 100 feet. Some are of irregular shape. The wells are either circular or rectangular and from 10 to 40 feet deep--often deeper still. If circular their diameter measures from 5 to 10 feet and if rectangular they are from 6 to 10 feet broad and 8 to 16 feet long. A few are dry in summer, but many wells yield an abundant and unfailing supply of water for domestic and agri-cultural purposes.

There is a small channel passing through the village which is full during the rains, but mostly dry in the hot months. A dam is however put across it in some places and the scanty water stored up for future use. But there is not any very considerable quantity.

427 *Occupation of land.*—Most of the cultivated area is sublet to tenants. This is characteristic of Malabar, where most of the land-lords do not themselves cultivate the land, but let it to others on short leases of 12 years called *kanom* leases. The kanom lease-holders in turn sublet the land, though a few of them actually cultivate it.

There are nominally 50 patta-holders and all of them come under the head of non-cultivating landowners. The richest have no particular occupation. Many are Nambudiri Brahmans not resident in the village, and they have comfortable positions as priests, pre-ceptors, etc. The biggest landowners, who almost monopolise the land, are two or three in number and they live in ease on the revenues of their lands.

The great body of tenants own no land; they simply rent it on kanom lease or are tenants at will. There may be one or two among the landowners who are also the kanom tenants of some other landlord. But as a rule the kanom tenant owns no land.

There is a growing body of landless agricultural labourers.

By the census of 1901 there were 383 landholders (tenants) in that year. This number declined to 258 in 1917, paying land-revenue as stated below (note that the superior occupier contracts with his tenants that the latter pay the kist).

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala All

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Less than Re. 1	54
From Re. 1 to Rs. 5	100
„ Rs. 5 to Rs. 10	49
„ Rs. 10 to Rs. 20	22
„ Rs. 20 to Rs. 30	10
„ Rs. 30 to Rs. 50	19
More than Rs. 50	4
	258

Many especially of those paying under Rs. 2 hold only the plots of ground in which their dwellings are erected.

Classification of holdings according to ownership.

423
651

Pattadars paying an assessment of	Number.	Extent.	Assessment.
		ACS.	RS. A. P.
I. Re. 1 and less	2	0·26	0 15 0
II. Over Re. 1 and up to Rs. 10 (inclusive).	22	28·04	95 8 0
III. „ Rs. 10 „ „ 30 „	7	26·44	129 6 0
IV. „ „ 30 „ „ 50 „	6	65·04	234 7 0
V. „ „ 50 „ „ 100 „	3	55·59	196 5 0
VI. „ „ 100 „ „ 250 „	2	106·97	301 4 0
VII. „ „ 250 „ „ 500 „	1	62·15	274 7 0
VIII. „ „ 500 „ „ 1,000 „	...	...	...
IX. Over Rs. 1,000	1	645·04	2,469 1 0

Thus the greater part of the cultivated land is owned by a single pattadar—a Nambudiripad, a very enlightened and sympathetic landlord who has a reputation for fairness and kind treatment. The majority of the other pattadars are also Nambudiris, very often holding the land as trustees of temples.

The following table shows the rate of assessment, area so assessed, with amount of assessment, of wet, dry and garden lands:—

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	I. Wet land.		II. Garden land.		III. Occupied dry land.		IV. Unoccupied dry land.	
	ACS.	RS. A.	ACS.	RS. A.	ACS.	RS. A.	ACS.	RS. A.
At Rs. 7-8 per acre.	108·49	813 11	...	...	...	...	...	...
„ 6-4 „	194·87	1,215 15	...	...	...	...	...	...
„ 6-0 „	0·09	0 9	0·03	0 3	...	...	...	...
„ 5-0 „	109·06	542 11	2·28	11 6	...	...	...	...
„ 4-0 „	39·21	157 5	7·09	28 6	...	...	...	...
„ 3-12 „	7·69	28 15	...	...	...	...	...	...
„ 3-0 „	93·37	280 1	14·28	42 14	...	...	...	...
„ 2-0 „	128·00	256 13	36·43	72 14	3·23	6 9	43·53	87 0
„ 1-8 „	...	...	...	...	61·87	92 5	122·82	184 3
„ 1-0 „	...	...	49·48	49 14	98·84	99 0	288·66	288 11
„ 0-12 „	...	...	...	...	38·57	28 15	643·77	482 13
„ 0-10 „	...	...	...	...	3·42	2 3	148·42	92 12
Total	680·78	3,296 0	109·59	205 9	205·93	229 0	1,247·20	1,135 7

31: Slater S-5 (1916-1917) 1918 AWI India
Kerala AWII

311 651 The assessment under IV. Unoccupied dry is the potential amount, i.e., it would be levied if the whole area were cultivated. About one-third or one-half of it may have been at one time or another under cultivation, but the area cultivated in any single year is very small.

[427] Rents are generally paid in kind, though of recent years there is a tendency in some cases (e.g., when the tenant lives at a distance) to commute it for money at current market rates.

The village is assessed for land revenue at a permanent charge of Rs. 3,759-3-0, to which must be added (to obtain the total revenue demanded upon the village, for the year) the charges on the 'unoccupied dry land' actually under cultivation in the year. This last will vary from year to year; the possible maximum is above Rs. 1,000. There is a local cess of 1¼ anna in the rupee of kist levied by the Taluk Board for roads, etc.

241 311 *Agriculture—Area under principal crops.*—The area under this head varies from year to year according as more or less of the unoccupied dry land is taken into cultivation. For the year ending March 1916, the following figures are given in the village accounts but they are less exact than they appear, being partly estimates by the village officials.

Paddy—First crop, 847·26 acres; second crop, 460·51 acres.		
Pulses and grains		122·47 acres.
Oil-seeds, gingelly		155·89 „
„ castor		12·59 „
Spices, etc., ...		87·23 „
Fuel and timber trees...		63·00 „
Betel leaves		5·00 „
Vegetables and garden products made up of—		
Vegetables	59·41	
Plantains and bananas	29·57	
Coconuts	17·00	
Mangoes	23·00	
Arecanuts	9·00	
Jack fruits	8·00	
	——	145·98

According to the 'A' Register the area of one crop wet land is 271 acres. In some years it appears that this area is smaller, because part of this is *potential* double-crop land, two crops can be raised on it under favourable conditions. But it may safely be said that some 150 acres of wet land yield only one crop. Such portion of the 'unoccupied dry' land which is cultivated in any year also yields but one crop—even that with difficulty, after lying fallow for one, two or more years.

The minimum available area of two-crop land is 409·73 acres. In some years (according to the weather and seasonal conditions) this may increase to some 525 acres. If irrigation could be extended more of the single crop area could be made to yield two crops.

243 Some fifteen to twenty-five acres may yield three crops, under favourable conditions.

All the wet land is utilized for paddy cultivation. Paddy is sown in May soon after the first rains. By the end of September or the beginning of October the first crop is harvested. The seed-